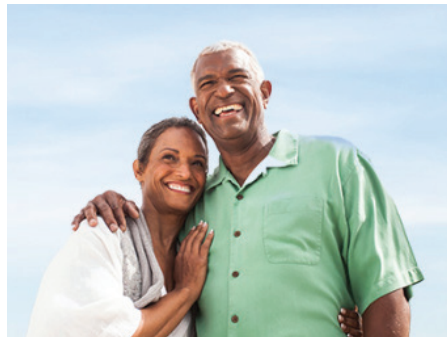




# *Injection Safety Toolkit for Providers*

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*SOUTH CAROLINA DEPARTMENT OF HEALTH AND  
ENVIRONMENTAL CONTROL*



*South Carolina Healthcare-Associated Infections (HAI) Section*  
*Division of Acute Disease Epidemiology, SC DHEC | 2100 BULL ST. COLUMBIA, SC 29201*

# Overview

## Statement of the Problem

Infection control breaches can occur in any health care setting and can result in the transmission of hepatitis B virus (HBV), hepatitis C virus (HCV), human immunodeficiency virus (HIV), and other viral and bacterial infections. According to the Centers for Disease Control and Prevention (CDC) more than 50 outbreaks of blood borne pathogens have occurred in the United States due to unsafe injection practices since 2001. In 2013, one notable outbreak involving nine cases of acute Hepatitis B associated with a spinal care center occurred in South Carolina. Nationally some of the most commonly identified breaches in safe injection practices involve the use of medication from a multi-dose vial or use of a new needle but the same syringe for more than one patient.

Injection safety, or safe injection practice, are recommended standards for performing injections in an optimally safe manner for patients and healthcare personnel. A new and clean needle, syringe, or lancet must be used whenever administering injection medications, IV fluids, performing glucose monitoring or for any procedure that may result in blood or body fluid contamination.

## How to use this Toolkit

The Injection Safety Toolkit for Health Care Providers was originally developed by the DHEC Health Care Associated Infections Section of the Division of Acute Disease Epidemiology in response to needs identified by South Carolina long-term care facilities in a survey of safe injection practices. However, safe injection practices are relevant for providers in all care settings. The Toolkit includes resources from CDC, the Occupational Safety and Health Administration (OSHA) and the Safe Injection Practices Coalition (SIPC) One and Only Campaign, a public health campaign developed to raise awareness among patients and healthcare providers about safe injection practices.

Health care facilities are encouraged to maintain safe injection standards, to assure ongoing training for workers, and to incorporate recommendations in this toolkit, with other professional resources, to assist in implementing or enhancing an injection safety campaign and safe injection practices. The reference section and the links to the One and Only Campaign, and the Healthcare Infection Control Practices Advisory Committee (HICPAC) found at the CDC website provide additional information about practice standards and training. This toolkit does not replace published standards and regulations.

Use the resources to educate all health care providers in your facility about safe injection practices and infection prevention strategies. Share the documents and links with all workers who perform any exposure prone procedures, including blood glucose monitoring, to support periodic, on-site training and to orient new staff. We hope you find this toolkit useful and appreciate any feedback on the materials including which resources are most helpful and which areas need improvement. Share this information with your staff and colleagues to promote safe injection practices at your worksite. For input or questions, please contact:

The DHEC Healthcare-Associated Infections Section phone: 803-898-0861

For more information visit: <http://www.scdhec.gov/Health/FHPF/>

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## *Educational Resources*



# Education

Breaches in injection safety practices are a serious health care issue. Improper injection safety practices have resulted in clusters of blood borne pathogens, large-scale patient call backs, mass post-exposure prophylaxis and follow up. A preventable public health risk and liability for providers.

This public health problem can be addressed by assuring adequate training of all health care workers who perform any type of injection procedures to include blood glucose monitoring, line flush or administration of injectable medications or medical procedures.

Health care facilities are encouraged to assure that all health care workers engage in a minimum of annual training in safe injection standards, and that all new workers are confirmed to have received training in injection safety. This Toolkit provides references to support training and education about safe infection practices and infection prevention strategies. The reference section and the links to the One and Only Campaign, and the Healthcare Infection Control Practices Advisory Committee (HICPAC) found at the CDC website provide additional information about practice standards and training. Share the documents and links with all workers who perform any exposure-prone procedures, including blood glucose monitoring, to support periodic, on-site training and to orient new staff. This toolkit does not replace published standards and regulations.

Injections and infusions of parenteral medication likely represent the most common invasive procedure across all healthcare facilities. The achieving the goal of injections without infections requires well-trained healthcare providers at all levels to adhere to Standard Precautions to minimize risk of infection to patients and healthcare personnel. Unsafe infections globally contributes to 30% of new Hepatitis B infections, 40% of new Hepatitis C infections and 5% of new HIV infections.

## **Unsafe infection Practices**

- Reuse of syringes
  - For multiple patients (“direct reuse”)
    - Examples include injecting through IV tubing, insulin pens and narcotics syringes that were subjected to tampering
  - To access shared medications
    - “Indirect reuse” a.k.a. “double dipping”
- Mishandling and inappropriate sharing of medication vials and containers
  - Administration of medication from a single-dose vial to multiple patients
  - Intravenous solution bags used as a common source of supply for multiple patients

In a survey of 5,500 U.S. healthcare professionals, 1% “sometimes or always” reused a syringe on a second patient or reused a multi-dose vial for additional patients after accessing it with a used syringe. 6% reported using single-dose vials for more than one patient.

## **CDC Standard Precautions, 2007: Safe Injection Practices**

- Use aseptic technique when preparing and administering medications
- Never administer medications from the same syringe to multiple patients
- Do not reuse a syringe to enter a medication vial or solution
- Do not administer medications from single-dose vials or intravenous solution bags to more than one patient
- Limit the use of multi-dose vials and dedicate them to a single patient whenever possible.

# THE IMPACT OF UNSAFE MEDICAL INJECTIONS IN THE U.S.

## Unsafe Injection Practices Have Devastating Consequences<sup>1</sup>

Syringe reuse and misuse of medication vials have resulted in dozens of outbreaks and

**THE NEED TO ALERT MORE THAN 150,000 PATIENTS...**

...to seek testing for bloodborne pathogens such as

**HEPATITIS B, HEPATITIS C AND HIV,<sup>2</sup>** and have led to...



Patient illness and death



Legal charges/ malpractice suits



Loss of clinician licenses



Criminal charges

In just one clinic, syringe reuse to access medication vials for multiple patients resulted in an outbreak and one of the largest public health alerts in U.S. history.



**50,000 PEOPLE EXPOSED TO INFECTION**

**\$16~\$20 MILLION IN COSTS**

## Outbreaks Occur in a Variety of Settings



Hospitals

Primary care clinics

Pediatric offices

Outpatient surgical centers



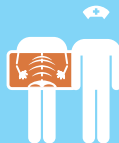
Pain clinics

Imaging facilities

Oncology clinics

Dental clinics

Health fairs



**Injection Safety is Every Provider's Responsibility**

## Steps Every Healthcare Provider Should Take



Follow proper infection control practices and maintain aseptic technique during the preparation and administration of injected medications (e.g., perform hand hygiene).



Never administer medications from the same syringe to more than one patient, even if the needle is changed.



Never enter a vial with a used syringe or needle.



Do not use medications packaged as single-dose or single-use for more than one patient.



Do not use bags of intravenous solution as a common source of supply for more than one patient.



Limit the use of multi-dose vials and dedicate them to a single patient whenever possible.



Always use facemasks when injecting material or inserting a catheter into the epidural or subdural space.



The Safe Injection Practices Coalition (SIPC) is a partnership of healthcare-related organizations led by the Centers for Disease Control and Prevention. The SIPC developed the *One & Only Campaign*—a public health effort to eliminate unsafe medical injections by raising awareness of safe injection practices. For a list of SIPC Partners, more information about the Campaign, and to view additional resources including videos and other materials, please visit [OneandOnlyCampaign.org](http://OneandOnlyCampaign.org)



For the latest news and updates, follow us on Twitter @injectionsafety and Facebook/OneandOnlyCampaign.

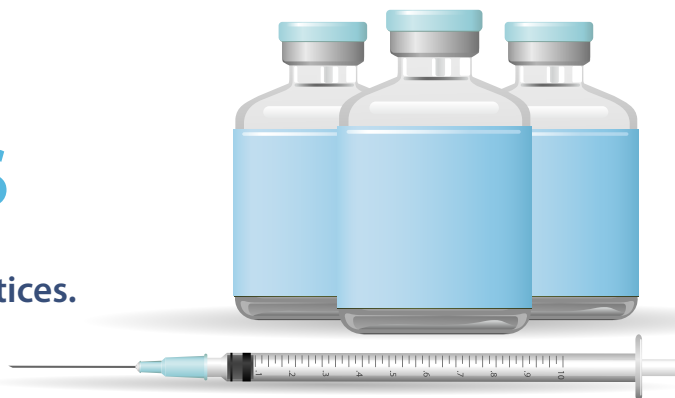
## FOOTNOTES

- 1 Centers for Disease Control and Prevention. (August 24, 2012). Injection Safety Information for Providers. In CDC.gov. Retrieved October 10 2012, from <http://www.cdc.gov/injectionsafety/providers.html>.
- 2 Guh, Alice Y. MD, MPH; Thompson, Nicola D. PhD; Schaefer, Melissa K. MD; Patel, Priti R. MD, MPH; Perz, Joseph F. DrPH. Patient Notification for Bloodborne Pathogen Testing due to Unsafe Injection Practices in the US Health Care Settings, 2001–2011. Medical Care Journal, May 2012.



# DANGEROUS MISPERCEPTIONS

Here are some examples of dangerous misperceptions about safe injection practices.



| Myth  | Truth   |
|---|---|
| Changing the needle makes a syringe safe for reuse.   | Once they are used, both the needle and syringe are contaminated and must be discarded. A new sterile needle and a new sterile syringe should always be used for each patient and to access medication vials.   |
| Syringes can be reused as long as an injection is administered through an intervening length of IV tubing.        | Everything from the medication bag to the patient's IV catheter is a single interconnected unit. Distance from the patient, gravity, or even infusion pressure do not ensure that small amounts of blood won't contaminate the syringe once it has been connected to the unit. Syringes should never be reused for more than one patient or to access medication vials. |
| If you don't see blood in the IV tubing or syringe, it means that those supplies are safe for reuse.              | Pathogens including hepatitis C virus, hepatitis B virus, and HIV can be present in sufficient quantities to produce infection without any visible blood.   |
| Single-dose vials with large volumes that appear to contain multiple doses can be used for more than one patient. | Single-dose vials should not be used for more than one patient regardless of the vial size.   |

**Injection Safety is  
Every Provider's Responsibility!**

# FAST FACTS: UNSAFE INJECTION PRACTICES



## The Impact of Unsafe Injection Practices

Although safe injection practices are basic infection control measures, they are not always followed.

- More than 150,000 patients have been impacted by unsafe injection practices since 2001. Breakdowns in proper infection control often involve providers reusing needles, syringes or single-dose medication vials, all of which are meant for one patient and one procedure. These breaches can cause irreparable damage exposing patients to bloodborne illnesses, such as hepatitis and HIV, and to life-threatening bacterial infections. Although safe injection practices represent very basic infection control measures, CDC routinely investigates outbreaks associated with deficient practices.
- As highlighted in a recent report from the U.S. Government Accountability Office (GAO) these data show that from 2001 through 2011, there were at least 18 outbreaks of viral hepatitis associated with unsafe injection practices in ambulatory settings, such as physician offices or ambulatory surgical centers (ASC). This does not include outbreaks of bacterial infections.
- A table from the Centers for Disease Control and Prevention includes examples of recent outbreaks and patient notification events occurring in a variety of outpatient settings, including primary care clinics, pediatric offices, ambulatory surgical centers, pain remediation clinics, imaging facilities, oncology clinics, and even health fairs: [www.OneAndOnlyCampaign.org/outbreaks-table](http://www.OneAndOnlyCampaign.org/outbreaks-table)
- The documented number of patients affected by unsafe injections likely represents only the tip of the iceberg. Some diseases and infections spread through unsafe infection practices can take years to show up. By the time symptoms arise, the disease or infection can cause irreparable damage.
- Consequences of unsafe injection practices include: infection transmission to patients, notification of thousands of patients of possible exposure to bloodborne pathogens, referral of providers to licensing boards for disciplinary action, and malpractice suits filed by patients.

## Lapses in Basic Infection Control

Many documented lapses in basic infection control practices involved healthcare providers reusing syringes when giving patients medication, or when drawing up medication from vials meant for only one use.

- Known outbreaks indicate that several procedures put patients most at risk:
  - The administration of sedatives and anesthetics for surgical, diagnostic, and pain management procedures
  - The administration of IV medications for chemotherapy, imaging studies, cosmetic procedures, and alternative medicine therapies (e.g., contrast medium)
  - The use of saline from an IV administration bag to flush IV lines and catheters



- The following practices are dangerous and have resulted in disease transmission:
  - Using the same syringe to administer medication to more than one patient, even if the needle was changed or the injection was administered through an intervening length of intravenous (IV) tubing <sup>1,2</sup>
  - Accessing medication with a syringe that has already been used to administer medication to a patient, then reusing the contaminated medication for another patient <sup>3,4,5,6</sup>
  - Using medications packaged as single-dose or single-use for more than one patient <sup>7,8,9</sup>
  - Failing to use aseptic technique when preparing and administering injections <sup>10,11,12</sup>
- A single-dose vial should only be used for one patient and any remaining contents should be discarded. There are options for working with high-quality pharmacies or pharmaceutical compounding companies when customized doses are needed. In such cases, it is critical that the pharmacy or company strictly adheres to USP 797 standards.

## Cases and Consequences of Unsafe Injection Practices

- **ARIZONA:** In April 2012, an outbreak of methicillin-resistant *Staphylococcus aureus* (MRSA) occurred at an outpatient pain management clinic in Arizona, where patients had been injected with a diluted contrast medium for radiologic imaging. Due partly to the difficulty in obtaining a reliable supply of a low-concentration contrast medium, the clinic staff prepared two batches of contrast medium, taken from a single-dose vial, and diluted with saline solution. One batch was used for all of the morning's patients and a second was used in the afternoon. All of the patients who contracted MRSA received an injection on the same day from the same batch of medication. Three patients were treated for severe infections, requiring hospitalization ranging from 9 – 41 days.<sup>14</sup> A fourth patient died from multiple drug overdose but invasive MRSA infection could not be ruled out.



- **DELAWARE:** In March of 2012, seven patients who had received joint injections at an outpatient orthopedic clinic in Delaware contracted a methicillin-susceptible *Staphylococcus aureus*. The only breach of safe practice that had taken place at the clinic was the reuse of single-dose vials (SDVs) of the anesthetic bupivacaine for multiple patients. Clinic staff had until recently been using 10 mL SDVs for single-patient use. However, a national drug shortage disrupted this supply and prompted the use of 30 mL SDVs for multiple patients, with staff drawing from the same vial until it was empty and occasionally storing it overnight for use the following day. The infected patients required an average hospital stay of six days to combat the infection. <sup>13</sup>



- **NEVADA:** A 2008 outbreak of hepatitis C at an endoscopy clinic in Nevada occurred because syringes used to access medication vials were reused for multiple patients. The resulting public health notification of approximately 50,000 people was the largest of its kind in United States healthcare. The Southern Nevada Health District estimated total public health costs including investigation, testing, and medical counseling at \$16-\$21 million. The doctor and two nurses involved in the outbreak face a loss of livelihood and reputation, as well as criminal charges that their malpractice insurance does not cover.



- **NEW JERSEY:** A 2009 outbreak of Hepatitis B at an oncology practice occurred as a result of a variety of unsafe injection practices. These practices included reuse of single-dose vials for multiple patients and use of a common source saline bag for multiple patients. The resulting public health notification affected 4,600 patients, and 29 cancer patients were infected with hepatitis B as a result of this outbreak. The State of New Jersey revoked the medical license of the physician who operated the oncology practice in 2011.



- **SOUTH CAROLINA:** In 2013, an outbreak of nine cases of acute hepatitis B associated with a spinal care center was identified. An investigation revealed breaches in infection control practices had occurred at the facility. These included lapses in safe injection practices, inadequate record keeping of equipment and medication, lacking written Infection control and blood borne pathogen exposure policies and plans. A specific source of the infections was not identified but cases were genetically and epidemiologically linked. The local health department notified 534 at-risk patients that had received injections at the facility.



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13. Centers for Disease Control and Prevention. Invasive Staphylococcus aureus Infections Associated with Pain Injections and Reuse of Single-Dose Vials — Arizona and Delaware, 2012. *Morbidity and Mortality Weekly Report*, July 13 2012. Accessed on 8.9.12 <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6127a1.htm>.
14. Ibid.
15. Unpublished data, South Carolina Department of Health and Environmental Control. (2013).





# FAQs

## FREQUENTLY ASKED QUESTIONS (FAQs) REGARDING SAFE PRACTICES FOR MEDICAL INJECTIONS

The FAQs are organized in the following sections:

- General
- Medication Preparation
- Medication Administration
- Single-dose/Single-use vials
- Multi-dose vials
- References

### A Note about Pharmacy Settings

While the use of aseptic technique when preparing and administering injectable medications is applicable to all healthcare settings, including pharmacy areas, these FAQs are not intended to reflect the standards and recommended practices for handling medication vials and related products in pharmacy settings—these should be determined in accordance with the state boards of pharmacy, the United States Pharmacopeia (USP), the Drug Enforcement Agency (DEA), and the Food and Drug Administration (FDA). Please visit [http://www.cdc.gov/injectionsafety/providers/provider\\_faqs.html](http://www.cdc.gov/injectionsafety/providers/provider_faqs.html) for updates or additional information. Published March 1, 2011.

### Background

Injection safety, or safe injection practices, is a set of measures taken to perform injections in an optimally safe manner for patients, healthcare personnel, and others.

The Standard Precautions section of the 2007 Guideline for Isolation Precautions provides evidence-based recommendations for safe injection practices and reflects the minimum standards that healthcare personnel should follow to prevent transmission of infections in healthcare settings.

Despite these recommendations, outbreaks and patient notifications resulting from healthcare personnel failing to adhere to Standard Precautions and basic infection control practices continue to be reported. Unsafe injection practices that have resulted in disease transmission have most commonly included:

- Using the same syringe to administer medication to more than one patient, even if the needle was changed or the injection was administered through an intervening length of intravenous (IV) tubing<sup>1,2</sup>;
- Accessing a medication vial or bag with a syringe that has already been used to administer medication to a patient, then reusing contents from that vial or bag for another patient<sup>3-6</sup>;
- Using medications packaged as single-dose or single-use for more than one patient<sup>7-9</sup>;
- Failing to use aseptic technique when preparing and administering injections<sup>10-12</sup>

For these reasons, CDC reminds healthcare personnel of the following practices that are critical for patient safety:

- Follow proper infection control practices and maintain aseptic technique during the preparation and administration of injected medications (e.g., perform hand hygiene).
- Never administer medications from the same syringe to more than one patient, even if the needle is changed.
- Never enter a vial with a used syringe or needle.
- Do not use medications packaged as single-dose or single-use for more than one patient.
- Do not use bags of intravenous solution as a common source of supply for more than one patient.
- Limit the use of multi-dose vials and dedicate them to a single patient whenever possible.
- Always use facemasks when injecting material or inserting a catheter into the epidural or subdural space.

The following FAQs summarize inquiries received by CDC from healthcare personnel regarding safe use of needles, syringes, and injectable medications in patient care settings. Wherever possible we have attempted to provide examples of outbreaks or patient notification incidents that support the guidance offered in these FAQs. An extensive reference list is included at the end of this document.

These FAQs are not intended as a comprehensive resource for all safe injection practices and additional considerations may be necessary for certain clinical scenarios or settings. Healthcare personnel are encouraged to consult the Standard Precautions section of the 2007 Guideline for Isolation Precautions to ensure that their practices adhere to the basic principles of infection control and aseptic technique. Additional information applicable to specific clinical settings or procedures may be available from professional organizations.



## GENERAL QUESTIONS

### 1. What is injection safety?

Injection safety, or safe injection practices, is a set of measures taken to perform injections in an optimally safe manner for patients, healthcare personnel, and others. A safe injection does not harm the recipient, does not expose the provider to any avoidable risks, and does not result in waste that is dangerous for the community (e.g., through inappropriate disposal of injection equipment)<sup>13</sup>. Injection safety includes practices intended to prevent transmission of infectious diseases between one patient and another, or between a patient and healthcare provider, and also to prevent harms such as needlestick injuries.

### 2. What is aseptic technique?

In this context, aseptic technique refers to the manner of handling, preparing, and storing of medications and injection equipment/supplies (e.g., syringes, needles and IV tubing) to prevent microbial contamination. See additional FAQs below for details on aseptic technique.

### 3. What are some of the unsafe injection practices that have resulted in transmission of pathogens?

The most common practices that have resulted in transmission of hepatitis C virus (HCV), hepatitis B virus (HBV) and/or other pathogens include:

- Using the same syringe to administer medication to more than one patient, even if the needle was changed or the injection was administered through an intervening length of intravenous (IV) tubing<sup>1,2</sup>;
- Accessing a medication vial or bag with a syringe that has already been used to administer medication to a patient, then reusing contents from that vial or bag for another patient<sup>3-6</sup>;
- Using medications packaged as single-dose or single-use for more than one patient<sup>7-9</sup>;
- Failing to use aseptic technique when preparing and administering injections<sup>10-12</sup>.

### 4. What are some procedures that have been associated with unsafe injection practices?

Unsafe injection practices that put patients at risk for HBV, HCV and other infections have been identified during various types of procedures. Examples include:

- Administration of sedatives and anesthetics for surgical, diagnostic, and pain management procedures;
- Administration of IV medications for chemotherapy, cosmetic procedures, and alternative medicine therapies;
- Use of saline solutions to flush IV lines and catheters;
- Administration of intramuscular (IM) vaccines.

The medications used in these procedures were in single-dose or single-use vials, multi-dose vials, and bags. What they had in common was the vials or bags were used for more than one patient and were entered with a syringe that had already been used for a patient; or the syringe itself was used for more than one patient.

### 5. Can some of these unsafe injection practices also result in transmission of bacterial infections?

Yes. These unsafe injection practices put patients at risk for bacterial, fungal, viral, and parasitic infections.

### 6. Is it acceptable to visually inspect syringes to determine whether they are contaminated or can be used again?

No. Just because blood or other material is not visible in a used syringe or IV tubing does not mean the item is free from potentially infectious agents. Pathogens including HBV, HCV, and human immunodeficiency

virus (HIV) can be present in sufficient quantities to produce infection in the absence of visible blood. Similarly, bacteria and other microbes can be present without clouding or other visible evidence of contamination. All used injection supplies and materials are potentially contaminated and should be discarded.

## 7. How can healthcare personnel ensure that injections are performed correctly?

To help ensure that all healthcare personnel understand and adhere to safe injection practices, we recommend the following:

1. Designate someone to provide ongoing oversight for infection control issues;
2. Develop written infection control policies;
3. Provide training;
4. Conduct quality assurance assessments



## MEDICATION PREPARATION QUESTIONS

### 1. How should I draw up medications?

Parenteral medications should be accessed in an aseptic manner. This includes using a new sterile syringe and sterile needle to draw up medications while preventing contact between the injection materials and the non-sterile environment. Proper hand hygiene should be performed before handling medications and the rubber septum should be disinfected with alcohol prior to piercing it.

### 2. Where should I draw up medications?

Medications should be drawn up in a designated clean medication area that is not adjacent to areas where potentially contaminated items are placed. Examples of contaminated items that should not be placed in or near the medication preparation area include: used equipment such as syringes, needles, IV tubing, blood collection tubes, needle holders (e.g., Vacutainer® holder), or other soiled equipment or materials that have been used in a procedure. In general, any item that could have come in contact with blood or body fluids should not be in the medication preparation area.

### 3. Is it acceptable to leave a needle inserted in the septum of a medication vial for multiple medication draws?

No. A needle should never be left inserted into a medication vial septum for multiple uses. This provides a direct route for microorganisms to enter the vial and contaminate the fluid.

### 4. Is it acceptable to leave a needle inserted in the septum of a medication vial for multiple medication draws?

The safest practice is to always enter a medication vial with a sterile needle and sterile syringe. There has been at least one outbreak attributed to healthcare personnel using a common needle and syringe to access multiple multi-dose vials for the purpose of combining their contents into a single syringe<sup>14</sup>. If one vial becomes contaminated, this practice can spread contamination to the others, prolonging presence of the pathogen and increasing the potential for disease transmission. Syringe reuse in this fashion may also have been a factor in additional outbreaks<sup>9</sup>.

While it is not recommended to use the same needle and syringe to enter more than one medication vial because of the risks described above, there are circumstances where more than one vial may need to be entered with the same syringe and needle (e.g., when reconstituting medications or vaccines). In these circumstances, aseptic technique must be followed and reconstitution should be performed in a designated clean medication area that is not adjacent to areas where potentially contaminated items are placed.



## MEDICATION ADMINISTRATION QUESTIONS

**1. Is it acceptable to use the same syringe to give an injection to more than one patient if I change the needle between patients?**

No. Once they are used, the syringe and needle are both contaminated and must be discarded. Use a new sterile syringe and needle for each patient.

**2. Is it acceptable to use the same syringe to give an injection to more than one patient if I change the needle between patients and I don't draw back before injecting?**

No. A small amount of blood can flow into the needle and syringe even when only positive pressure is applied outward. The syringe and needle are both contaminated and must be discarded.

**3. If I used a syringe only to inject medications into an IV tubing port that is several feet away from the patient's IV catheter site, is it acceptable to use the same syringe for another patient?**

No. Everything from the medication bag to the patient's catheter is a single interconnected unit. All of the components are directly or indirectly exposed to the patient's blood and cannot be used for another patient. A syringe that intersects through ports in the IV tubing or bags also becomes contaminated and cannot be used for another patient. Separation from the patient's IV by distance, gravity and/or positive infusion pressure does not ensure that small amounts of blood are not present in these items.

**4. Is it acceptable to reuse a syringe and/or needle to enter a medication vial for the same patient if the medication vial and the syringe will be discarded at the end of the procedure and not used for subsequent patients?**

The safest practice is to always enter a medication vial with a sterile needle and sterile syringe, even when obtaining additional doses of medication for the same patient. This adds an extra layer of safety in case, for some reason, the medication vial is not discarded at the end of the procedure as it should be and is inadvertently used on a subsequent patient.

There have been multiple outbreaks resulting from healthcare personnel reusing syringes to access medications for a single patient and then using contents from that vial or bag for subsequent patients<sup>3-4</sup>. In some of these outbreaks, healthcare personnel believed that they were being careful and their intention was to discard the vial or bag at the end of the procedure; however, this did not always occur and contents from the vial or bag were inadvertently used for subsequent patients<sup>5</sup>.

**5. Is it acceptable to use the same syringe and/or needle to administer multiple injections to the same patient (e.g., in the case of numbing a large area of skin or to provide incremental doses of intravenous medication)?**

The safest practice is for a syringe and needle to be used only once to administer a medication to a single patient, after which the syringe and needle should be discarded. This practice prevents inadvertent reuse of the syringe and protects healthcare personnel from harms such as needlestick injuries.

However, when this is not feasible (e.g., when administration of incremental doses to a single patient from the same syringe is an integral part of the procedure), reuse of the same syringe and needle for the same patient should occur as part of a single procedure with strict adherence to aseptic technique. In such situations it is essential that the syringe never be left unattended and that it be discarded immediately at the end of the procedure.

There have been situations of disease transmission and recent patient notification events in the setting of unintentional syringe reuse after a syringe was not immediately discarded following use on a patient<sup>2,15</sup>. Please visit [http://www.cdc.gov/injectionsafety/providers/provider\\_faqs.html](http://www.cdc.gov/injectionsafety/providers/provider_faqs.html) for updates or additional information. Published March 1, 2011.

## QUESTIONS ABOUT SINGLE-DOSE/SINGLE-USE VIALS

### 1. What is a single-dose or single-use vial?

A single-dose or single-use vial is a vial of liquid medication intended for parenteral administration (injection or infusion) that is meant for use in a single patient for a single case/procedure/injection. Single-dose or single-use vials are labeled as such by the manufacturer and typically lack an antimicrobial preservative.



### 2. Can single-dose or single-use vials be used for more than one patient?

No. Vials that are labeled as single-dose or single-use should be used for a single patient and single case/procedure/injection. There have been multiple outbreaks resulting from healthcare personnel using single-dose or single-use vials for multiple patients<sup>3,6-9</sup>.

Even if a single-dose or single-use vial appears to contain multiple doses or contains more medication than is needed for a single patient, that vial should not be used for more than one patient nor stored for future use on the same patient.

To prevent unnecessary waste or the temptation to use contents from single-dose or single-use vials for more than one patient, healthcare personnel should select the smallest vial necessary for their needs when making purchasing decisions.

### 3. How many times may individual single-dose or single-use vials be entered for a single patient?

The safest practice is to enter a single-dose or single-use vial only once so as to prevent inadvertent contamination of the vial and infection transmission. Single-dose or single-use vials should be used for a single patient and a single case/procedure/injection. Therefore, they should require only a single entry into the vial.

However, in certain situations, healthcare personnel may believe that drawing the entire contents of the vial into a single syringe will not allow for safe and accurate titration of dosage (e.g., pediatric dosing during a surgical procedure). In these circumstances, healthcare personnel must consider the risk of repeated entry into a single-dose or single-use vial for that single patient/procedure.

If the single-dose or single-use vial will be entered more than once for a single patient as part of a single procedure, it should be with a new needle and new syringe, and the vial must be discarded at the end of the procedure and not stored for future use.

### 4. Is it acceptable to combine (pool) leftover medication from single-dose or single-use vials?

No. Do not combine (pool) leftover contents of single-dose or single-use vials or store single-dose or single-use vials for later use. Single-dose or single-use vials are intended for use on a single patient for a single case/procedure. There have been outbreaks resulting from pooling of contents of single-dose or single-use vials and/or storage of contents for future use<sup>8</sup>.

### 5. When should single-dose or single-use vials be discarded?

Medication vials should always be discarded whenever sterility is compromised or questionable.

In addition, the following recommendations are made for handling of single-dose or single-use vials:

- If a single-dose or single-use vial has been opened or accessed (e.g., needle-punctured) the vial should be discarded according to the time the manufacturer specifies for the opened vial or at the end of the case/procedure for which it is being used, whichever comes first. It should not be stored for future use.
- If a single-dose or single-use vial has not been opened or accessed (e.g., needle-punctured), it should be discarded according to the manufacturer's expiration date. Please visit [http://www.cdc.gov/injectionsafety/providers/provider\\_faqs.html](http://www.cdc.gov/injectionsafety/providers/provider_faqs.html) for updates or additional information. Published March 1, 2011.



## QUESTIONS ABOUT MULTI-DOSE VIALS

### 1. What is a multi-dose vial?

A multi-dose vial is a vial of liquid medication intended for parenteral administration (injection or infusion) that contains more than one dose of medication. Multi-dose vials are labeled as such by the manufacturer and typically contain an antimicrobial preservative to help prevent the growth of bacteria. The preservative has no effect on viruses and does not protect against contamination when healthcare personnel fail to follow safe injection practices.

### 2. Can multi-dose vials be used for more than one patient? How?

Multi-dose vials should be dedicated to a single patient whenever possible.

If multi-dose vials must be used for more than one patient, they should not be kept or accessed in the immediate patient treatment area. This is to prevent inadvertent contamination of the vial through direct or indirect contact with potentially contaminated surfaces or equipment that could then lead to infections in subsequent patients. If a multi-dose vial enters the immediate patient treatment area, it should be dedicated to that patient only and discarded after use.

### 3. What are examples of the “immediate patient treatment area”?

Examples of the immediate patient treatment area include patient rooms or bays, and operating rooms.

### 4. When should multi-dose vials be discarded?

Medication vials should always be discarded whenever sterility is compromised or questionable.

In addition, the United States Pharmacopeia (USP) General Chapter 79716 recommends the following for multi-dose vials of sterile pharmaceuticals:

- If a multi-dose has been opened or accessed (e.g., needle-punctured) the vial should be dated and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial.
- If a multi-dose vial has not been opened or accessed (e.g., needle-punctured), it should be discarded according to the manufacturer's expiration date.

The manufacturer's expiration date refers to the date after which an unopened multi-dose vial should not be used. The beyond-use-date refers to the date after which an opened multi-dose vial should not be used. The beyond-use-date should never exceed the manufacturer's original expiration date.

For information on storage and handling of vaccines please refer to the CDC Vaccine Storage and Handling Toolkit: <http://www2a.cdc.gov/vaccines/ed/shtoolkit/> or the manufacturer's recommendations for specific vaccines.

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The Safe Injection Practices Coalition (SIPC) is a partnership of healthcare-related organizations led by the Centers for Disease Control and Prevention. The SIPC developed the *One & Only Campaign*—a public health effort to eliminate unsafe medical injections by raising awareness of safe injection practices. For a list of SIPC Partners, more information about the Campaign, and to view additional resources including videos and other materials, please visit:

[OneandOnlyCampaign.org](http://OneandOnlyCampaign.org)



For the latest news and updates, follow us on  
Twitter @injectionsafety and Facebook/OneandOnlyCampaign.

This material was developed by CDC. The *One & Only Campaign* is made possible by partnership between the CDC Foundation and Lilly USA, LLC.

# *OSHA National Standards*



# OSHA<sup>®</sup> FactSheet

## OSHA's Bloodborne Pathogens Standard

**Bloodborne pathogens are infectious microorganisms present in blood that can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV), the virus that causes AIDS. Workers exposed to bloodborne pathogens are at risk for serious or life-threatening illnesses.**

### Protections Provided by OSHA's Bloodborne Pathogens Standard

All of the requirements of OSHA's Bloodborne Pathogens standard can be found in Title 29 of the Code of Federal Regulations at 29 CFR 1910.1030. The standard's requirements state what employers must do to protect workers who are occupationally exposed to blood or other potentially infectious materials (OPIM), as defined in the standard. That is, the standard protects workers who can reasonably be anticipated to come into contact with blood or OPIM as a result of doing their job duties.

In general, the standard requires employers to:

- **Establish an exposure control plan.** This is a written plan to eliminate or minimize occupational exposures. The employer must prepare an exposure determination that contains a list of job classifications in which all workers have occupational exposure and a list of job classifications in which some workers have occupational exposure, along with a list of the tasks and procedures performed by those workers that result in their exposure.
- **Employers must update the plan annually** to reflect changes in tasks, procedures, and positions that affect occupational exposure, and also technological changes that eliminate or reduce occupational exposure. In addition, employers must annually document in the plan that they have considered and begun using appropriate, commercially-available effective safer medical devices designed to eliminate or minimize occupational exposure. Employers must also document that they have solicited input from frontline workers in identifying, evaluating, and selecting effective engineering and work practice controls.
- **Implement the use of universal precautions** (treating all human blood and OPIM as if known to be infectious for bloodborne pathogens).
- **Identify and use engineering controls.** These are devices that isolate or remove the bloodborne pathogens hazard from the workplace. They include sharps disposal containers, self-sheathing needles, and safer medical devices, such as sharps with engineered sharps-injury protection and needleless systems.
- **Identify and ensure the use of work practice controls.** These are practices that reduce the possibility of exposure by changing the way a task is performed, such as appropriate practices for handling and disposing of contaminated sharps, handling specimens, handling laundry, and cleaning contaminated surfaces and items.
- **Provide personal protective equipment (PPE), such as gloves, gowns, eye protection, and masks.** Employers must clean, repair, and replace this equipment as needed. Provision, maintenance, repair and replacement are at no cost to the worker.
- **Make available hepatitis B vaccinations to all workers with occupational exposure.** This vaccination must be offered after the worker has received the required bloodborne pathogens training and within 10 days of initial assignment to a job with occupational exposure.
- **Make available post-exposure evaluation and follow-up to any occupationally exposed worker who experiences an exposure incident.** An exposure incident is a specific eye, mouth, other mucous membrane, non-intact skin, or parenteral contact with blood or OPIM. This evaluation and follow-up must be at no cost to the worker and includes documenting the route(s) of exposure and the circumstances

under which the exposure incident occurred; identifying and testing the source individual for HBV and HIV infectivity, if the source individual consents or the law does not require consent; collecting and testing the exposed worker's blood, if the worker consents; offering post-exposure prophylaxis; offering counseling; and evaluating reported illnesses. The healthcare professional will provide a limited written opinion to the employer and all diagnoses must remain confidential.

- **Use labels and signs to communicate hazards.** Warning labels must be affixed to containers of regulated waste; containers of contaminated reusable sharps; refrigerators and freezers containing blood or OPIM; other containers used to store, transport, or ship blood or OPIM; contaminated equipment that is being shipped or serviced; and bags or containers of contaminated laundry, except as provided in the standard. Facilities may use red bags or red containers instead of labels. In HIV and HBV research laboratories and production facilities, signs must be posted at all access doors when OPIM or infected animals are present in the work area or containment module.
- **Provide information and training to workers.** Employers must ensure that their workers receive regular training that covers all elements of the standard including, but not limited to: information on bloodborne pathogens and diseases, methods used to control occupational

exposure, hepatitis B vaccine, and medical evaluation and post-exposure follow-up procedures. Employers must offer this training on initial assignment, at least annually thereafter, and when new or modified tasks or procedures affect a worker's occupational exposure. Also, HIV and HBV laboratory and production facility workers must receive specialized initial training, in addition to the training provided to all workers with occupational exposure. Workers must have the opportunity to ask the trainer questions. Also, training must be presented at an educational level and in a language that workers understand.

- **Maintain worker medical and training records.** The employer also must maintain a sharps injury log, unless it is exempt under Part 1904 -- Recording and Reporting Occupational Injuries and Illnesses, in Title 29 of the Code of Federal Regulations.

### Additional Information

For more information, go to OSHA's Bloodborne Pathogens and Needlestick Prevention Safety and Health Topics web page at: <https://www.osha.gov/SLTC/bloodbornepathogens/index.html>.

To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or products, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call us toll-free at **(800) 321-OSHA (6742)**.

**This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; the teletypewriter (TTY) number is (877) 889-5627.**

**For assistance, contact us. We can help. It's confidential.**



DSG 1/2011

# OSHA<sup>®</sup> FactSheet

## Personal Protective Equipment (PPE) Reduces Exposure to Bloodborne Pathogens

**OSHA's Bloodborne Pathogens standard (29 CFR 1910.1030) requires employers to protect workers who are occupationally exposed to blood and other potentially infectious materials (OPIM), as defined in the standard. That is, the standard protects workers who can reasonably be anticipated to come into contact with blood or OPIM as a result of doing their job duties.**

One way the employer can protect workers against exposure to bloodborne pathogens, such as hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV), the virus that causes AIDS, is by providing and ensuring they use personal protective equipment, or PPE. Wearing appropriate PPE can significantly reduce risk, since it acts as a barrier against exposure. Employers are required to provide, clean, repair, and replace this equipment as needed, and at no cost to workers.

### Selecting Personal Protective Equipment

Personal protective equipment may include gloves, gowns, laboratory coats, face shields or masks, eye protection, pocket masks, and other protective gear. The PPE selected must be appropriate for the task. This means the level and type of protection must fit the expected exposure. For example, gloves may be the only PPE needed for a laboratory technician who is drawing blood. However, a pathologist conducting an autopsy would need much more protective clothing because of the different types of exposure (e.g., splashes, sprays) and the increased amount of blood and OPIM that are encountered. PPE must be readily accessible to workers and available in appropriate sizes.

If it can be reasonably expected that a worker could have hand contact with blood, OPIM, or contaminated surfaces or items, the employer must ensure that the worker wears gloves. Single-use gloves cannot be washed or decontaminated for reuse. Utility gloves may be decontaminated if their ability to provide an effective barrier is not compromised. They should be replaced when

they show signs of cracking, peeling, tearing, puncturing, or deteriorating. Non-latex gloves, glove liners, powderless gloves or similar alternatives must be provided if workers are allergic to the gloves normally provided.

Gloves are required for all phlebotomies outside of volunteer blood donation centers. If an employer in a volunteer blood donation center judges that routine gloving for all phlebotomies is not necessary, then the employer is required to periodically re-evaluate this policy; make gloves available for workers who want to use them; and cannot discourage their use. In addition, employers must ensure that workers in volunteer blood donation centers use gloves (1) when they have cuts, scratches or other breaks in their skin, (2) while they are in training, or (3) when the worker believes that hand contamination might occur.

When splashes, sprays, splatters, or droplets of blood or OPIM pose a hazard to the eyes, nose or mouth, then masks in conjunction with eye protection (such as goggles or glasses with solid side shields) or chin-length face shields must be worn. Protection against exposure to the body is provided by protective clothing, such as gowns, aprons, lab coats, and similar garments. Surgical caps or hoods, and shoe covers or boots are needed when gross contamination is expected, such as during orthopedic surgery or autopsies.

In HIV and HBV research laboratories and production facilities, laboratory coats, gowns, smocks, uniforms, or other appropriate protective clothing must be used in work areas and animal rooms. Also, protective clothing must not be worn outside of the work area and must be decontaminated before being laundered.

## Exception to Use of Personal Protective Equipment

A worker may choose, temporarily and briefly, **under rare and extraordinary circumstances**, to forego use of personal protective equipment. It must be the worker's professional judgment that using the personal protective equipment would prevent the delivery of health care or public safety services or would pose an increased hazard to the safety of the worker or coworker. When such a situation occurs, the employer is required to investigate and document the circumstances to determine if there is a way to avoid it from happening again in the future. Employers and workers should be aware that this is not a blanket exemption to the requirement to use PPE. OSHA expects that this will be an extremely rare occurrence.

## Decontaminating and Disposing of Personal Protective Equipment

Employers must ensure that workers remove personal protective equipment before leaving the

work area. If a garment is penetrated by blood or OPIM, it must be removed immediately or as soon as feasible. Once PPE is removed, it must be placed in an appropriately designated area or container for storage, washing, decontamination, or disposal. In addition, employers must ensure that workers wash their hands immediately or as soon as feasible after removal of gloves or other personal protective equipment.

## Additional Information

For more information, go to OSHA's Bloodborne Pathogens and Needlestick Prevention Safety and Health Topics web page at: <https://www.osha.gov/SLTC/bloodbornepathogens/index.html>.

To file a complaint by phone, report an emergency, or get OSHA advice, assistance, or products, contact your nearest OSHA office under the "U.S. Department of Labor" listing in your phone book, or call us toll-free at (800) 321-OSHA (6742).

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**For assistance, contact us. We can help. It's confidential.**



DSG 1/2011

*Guidance for Blood Glucose Monitoring  
and Insulin Administration*

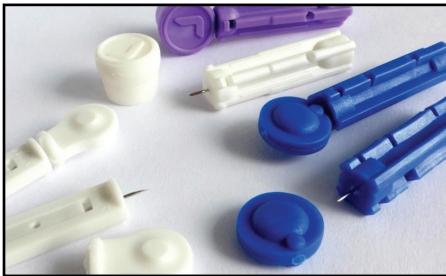
# *Unsafe Practices During Blood Glucose Monitoring and Insulin Administration*

An underappreciated risk of blood glucose testing is the opportunity for exposure to bloodborne viruses (HBV, hepatitis C virus, and HIV) through contaminated equipment and supplies if devices used for testing and/or insulin administration (e.g., blood glucose meters, fingerstick devices, insulin pens) are shared.

Outbreaks of hepatitis B virus (HBV) infection associated with blood glucose monitoring have been identified with increasing regularity, particularly in long-term care settings, such as nursing homes and assisted living facilities, where residents often require assistance with monitoring of blood glucose levels and/or insulin administration. Although the majority of these outbreaks have been reported in long-term care settings, the risk of infection is present in any setting where blood glucose monitoring equipment is shared or those assisting with blood glucose monitoring and/or insulin administration fail to follow basic principles of infection control.

The following are infection control recommendations based on CDC guidelines that anyone who performs or assists with blood glucose monitoring and /or insulin administration should review to assure they are not placing themselves or persons in their care at risk:

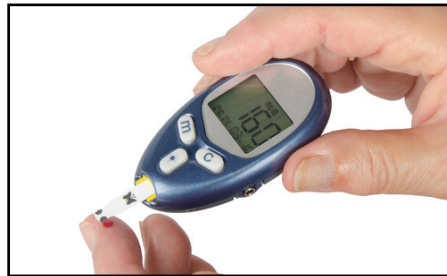
## *Best Practices for Assisted Blood Glucose Monitoring and Insulin Administration*



### **Lancets**

Restrict use of fingerstick devices to individual persons. They should never be used for more than one person. Select single-use lancets that permanently retract upon puncture. This adds an extra layer of safety for the patient and the provider.

Dispose of used lancets at the point of use in an approved sharps container. Never reuse lancets.



### **Blood Glucose Meters**

Whenever possible, blood glucose meters should be assigned to an individual person and not be shared.

If blood glucose meters must be shared, the device should be cleaned and disinfected after every use, per manufacturer's instructions, to prevent carry-over of blood and infectious agents. If the manufacturer does not specify how the device should be cleaned and disinfected then it should not be shared.



### **Insulin Administration**

Insulin pens should be assigned to individual persons and labeled appropriately. They should never be used for more than one person.

Multiple-dose vials of insulin should be dedicated to a single person whenever possible. If the vial must be used for more than one person it should be stored and prepared in a dedicated medication preparation area outside of the patient care environment and away from potentially contaminated equipment.

Medication vials should always be entered with a new needle and new syringe. Never reuse needles or syringes.



# CDC CLINICAL REMINDER

## Insulin Pens Must Never Be Used for More than One Person

### Summary

The Centers for Disease Control and Prevention (CDC) has become increasingly aware of reports of improper use of insulin pens, which places individuals at risk of infection with pathogens including hepatitis viruses and human immunodeficiency virus (HIV). This notice serves as a reminder that insulin pens must **never** be used on more than one person.

### Background

Insulin pens are pen-shaped injector devices that contain a reservoir for insulin or an insulin cartridge. These devices are designed to permit self-injection and are intended for single-person use. In healthcare settings, these devices are often used by healthcare personnel to administer insulin to patients. Insulin pens are designed to be used multiple times, for a single person, using a new needle for each injection. Insulin pens must **never** be used for more than one person. Regurgitation of blood into the insulin cartridge can occur after injection [1] creating a risk of bloodborne pathogen transmission if the pen is used for more than one person, even when the needle is changed.



In 2009, in response to reports of improper use of insulin pens in hospitals, the Food and Drug Administration (FDA) issued an alert for healthcare professionals reminding them that insulin pens are meant for use on a single patient only and are not to be shared between patients [2]. In spite of this alert, there have been continuing reports of patients placed at risk through inappropriate reuse and sharing of insulin pens, including an incident in 2011 that required notification of more than 2,000 potentially exposed patients [3]. These events indicate that some healthcare personnel do not adhere to safe practices and may be unaware of the risks these unsafe practices pose to patients.

### Recommendations

Anyone using insulin pens should review the following recommendations to ensure that they are not placing persons in their care at risk for infection.

- Insulin pens containing multiple doses of insulin are meant for use on a single person only, and should **never** be used for more than one person, even when the needle is changed.
- Insulin pens should be clearly labeled with the person's name or other identifying information to ensure that the correct pen is used **only** on the correct individual.
- Hospitals and other facilities should review their policies and educate their staff regarding safe use of insulin pens and similar devices.
- If reuse is identified, exposed persons should be promptly notified and offered appropriate follow-up including bloodborne pathogen testing.

These recommendations apply to any setting where insulin pens are used, including assisted living or residential care facilities, skilled nursing facilities, clinics, health fairs, shelters, detention facilities, senior centers, schools, and camps as well as licensed healthcare facilities. Protection from infections, including bloodborne pathogens, is a basic expectation anywhere healthcare is provided. Use of insulin pens for more than one person, like other forms of syringe reuse [4], imposes unacceptable risks and should be considered a 'never event'.

See additional information on [assuring safe care during blood glucose monitoring and insulin administration](#).

### References

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2. [Information for healthcare professionals: risk of transmission of blood-borne pathogens from shared use of insulin pens \(2009\)](#). U.S. Food and Drug Administration Postmarket Drug Safety Information for Patients and Providers.
3. [Important Patient Safety Notification \(2011\)](#). Dean Clinic.
4. [Centers for Disease Control and Prevention \(CDC\) and the Safe Injection Practices Coalition \(SIPC\)](#)

# Blood Glucose Monitoring Safety Checklist

## Step 1

- Regularly review each patient's schedules for fingerstick blood glucose sampling to reduce the number of percutaneous procedures to the minimum necessary for appropriate medical management of diabetes and its complications.

## Step 2

- Decontaminate blood glucose monitor regularly prior to use and anytime surfaces become contaminated with blood or body fluids.

## Step 3

- Restrict use of fingerstick capillary blood sampling devices to individual patients. Consider selecting single-use lancets that permanently retract upon puncture.

## Step 4

- Assign glucometers to individual patients. If a blood glucose meter must be used for multiple patients, the device must be cleaned and disinfected between each patient use.

## Step 5

- Perform hand hygiene (i.e., handwashing with soap and water or use of an alcohol-based hand rub) prior to procedure.

## Step 6

- Wear gloves during fingerstick glucose monitoring and during any other procedure that involves potential exposure to blood or bodily fluids. Perform hand hygiene after removal of gloves.

## Step 7

- Dispose of used fingerstick devices and lancets at the point of use in an approved sharps container.



# Insulin Administration Safety Checklist

## Step 1

- Ensure that injection equipment (i.e., insulin pens, needles, and syringes) should never be used for more than one person.

## Step 2

- Assign insulin pens to individual persons and label with the person's name or other identifying information to ensure that the correct pen is used **only** on the correct individual.

## Step 3

- Dedicate multiple-dose vials of insulin to a single person whenever possible. If the vial must be used for more than one person it should be stored and prepared in a dedicated medication preparation area outside of the patient care environment and away from potentially contaminated equipment.
- Always enter medication vials with a new needle and syringe with every individual.

## Step 4

- Check the expiration date of insulin prior to administration.

## Step 5

- Verify dosage recommendation according to physician/pharmacy order for administration based on the individual's blood glucose result.

## Step 6

- Perform hand hygiene prior to and after insulin administration.

## Step 7

- Dispose of needles in an approved sharps container.


# *Training*

## *Safe Injection Training and Oversight for Healthcare Staff*

1. Establish responsibility for oversight of infection control activities. Investigate and report any suspected case that may represent a newly acquired blood-borne infection.
2. Have staff demonstrate knowledge of standard precautions guidelines and proficiency in application of these guidelines during procedures that involve possible blood or body fluid exposures.
3. Provide staff members who assume responsibilities involving percutaneous procedures with infection control training that includes practical demonstration of aseptic techniques and instruction regarding reporting exposures or breaches. Direct annual retraining to all staff members who perform procedures that involve exposure to blood or body fluids.
4. Assess compliance with infection control recommendations for fingerstick glucose monitoring (such as hand hygiene and glove changes between patients) by periodically observing personnel and tracking use of supplies.
5. Provide a full hepatitis B vaccination series to all previously unvaccinated staff persons whose activities involve contact with blood or body fluids. Check and document post-vaccination titers one to two months after completion of the vaccination series.







## Outline!

- Safe Injection Practices"
- The ONE and ONLY Campaign"
- Outbreak History"
- Mistaken Beliefs"
- A Call to Action"
- Resources and Information"



## Why Unsafe Injection Practices Are Unacceptable!



- "Injection safety is part of Standard Precautions"
- "Healthcare practices should not provide a pathway for transmission of life-threatening infections"
- "Patient protections regarding injection safety should be on par with healthcare worker safety"



## Three Things Every Provider Needs to Know About Injection Safety!

1. Needles and syringes are single use devices. They should not be used for more than one patient or reused to draw up additional medication."
2. Do not administer medications from a single-dose vial or IV bag to multiple patients."
3. Limit the use of multi-dose vials and dedicate them to a single patient whenever possible."

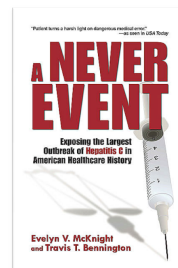


## Evelyn McKnight's Story!

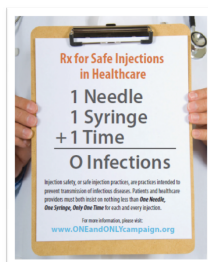
Dr. Evelyn McKnight, mother of three, was battling breast cancer and was infected with hepatitis C during treatment because of syringe reuse to access saline flush solution."

Along with Evelyn, a total of 99 cancer patients were infected in what was one of the largest outbreaks of hepatitis C in American healthcare history."

Evelyn co-founded HONORreform, a foundation dedicated to improving America's injection safety practices, and was the catalyst of the formation of the Safe Injection Practices Coalition."



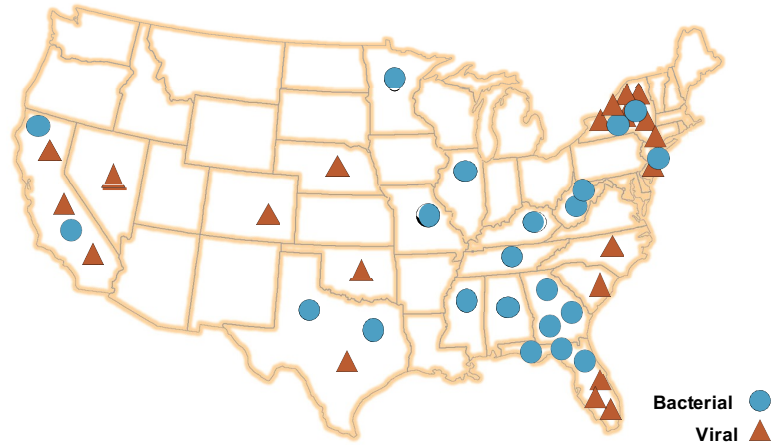
## The ONE and ONLY Campaign!



- Launched in response to outbreaks resulting from unsafe injection practices"
- Led by the Centers for Disease Control and Prevention (CDC) and the Safe Injection Practices Coalition"
- Goals"
  - Increase understanding and implementation of safe injection practices among healthcare providers"
  - Ensure patients are protected each and every time they receive a medical injection"



## U.S. Outbreaks Associated with Unsafe Injection Practices, 2001-2011



Over 125,000 patients were notified as a result of incidents and outbreaks involving unsafe injections practices "



City alerts 450 patients of Hylan Boulevard clinic to hepatitis C Concern  
June 17, 2011

**MailOnline**

Parents' horror as they are told to test their infants for HIV after flu vaccine mix-up  
April 13, 2011



NJ doctor loses license after hepatitis B outbreak  
September 15, 2011

**Outpatient Surgery**

Nurse accused of stealing pain meds gets probation  
September 20, 2011

Guh, A. et al. "Patient Notification for Bloodborne Pathogen Testing Due to Unsafe Injection Practices in U.S. Healthcare Settings, 1999-2009." Fifth International Conference on Healthcare-Associated Infections, Centers for Disease Control and Prevention, Atlanta, GA, 20 March 2010. Retrieved from <http://shea.confex.com/shea/2010/webprogram/Paper1789.html>



## Injection Practices Among Clinicians in United States Health Care Settings!

- Survey of 5,500 U.S. healthcare professionals "
- 1 percent "sometimes or always" reuse a syringe on a second patient "
- 1 percent "sometimes or always" reuse a multidose vial for additional patients after accessing it with a used syringe "
- 6 percent use single-dose/single use vials for more than one patient"

Pugliese G., Gosnell C., Bartley J., & Robinson S. (December 2010). Injection practices among clinicians in United States health care settings. *American Journal of Infection Control*, 38 (10), 789-796. Retrieved from [http://www.ajicjournal.org/article/PIIS0196-6563\(10\)00853-9](http://www.ajicjournal.org/article/PIIS0196-6563(10)00853-9) (abstract)



## When Safe Practices are Used...!

**Each Patient is an Island!**



**SOURCE!**  
Infectious person,"  
e.g. chronic, acute"

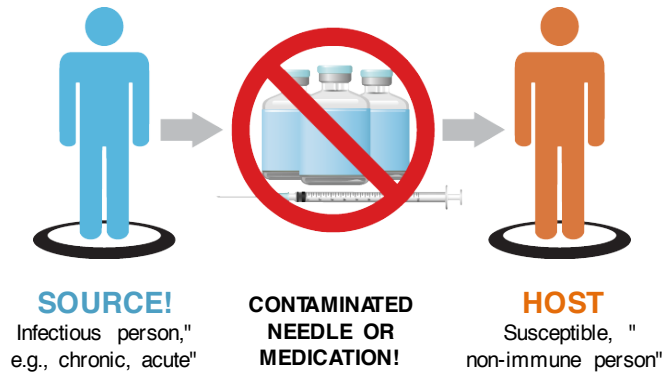


**HOST**  
Susceptible, "  
non-immune person"





## Unsafe Injection Practices Can Lead to Transmission of Life-Threatening Infections!



**LIMIT OR ELIMINATE REUSE!**

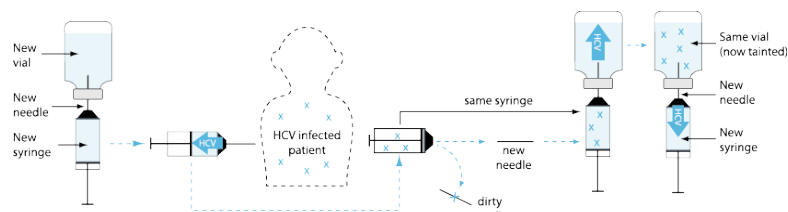


## Las Vegas, Nevada Outbreak, 2008!

- Cluster of three acute HCV infections identified in Las Vegas"
- All three patients underwent procedures at the same endoscopy clinic during the incubation period"
- Two breaches contributed to transmission:"
  - Re-entering vials with used syringes"
  - Using contents from these single-dose vials on more than one patient"



## Las Vegas, Nevada Outbreak, 2008!



Adapted from MMWR (May 16, 2008 / 57(19):513-517)



## Insulin Pen Reuse Incidents!

- Reuse of insulin pens for multiple patients, reportedly after changing needles has resulted in large notifications"
  - NY hospital, 2008: 185 patients notified"
  - TX hospital, 2009: 2,114 patients notified"
  - WI hospital and outpatient clinic, 2011: 2,401 patients notified"





Infection Prevention during Blood Glucose Monitoring and Insulin Administration (2012). Retrieved March 9, 2012 from <http://www.cdc.gov/injectionsafety/blood-glucose-monitoring.html>  
 Important Patient Safety Notification (2011). Retrieved March 9, 2012 from <http://www.deanecare.com/about-dean/news/2011/important-patient-safety-notification>





## True or False?!

**“I’m preventing contamination and infection transmission as long as I’m...”!**

“...changing the needle between patients.”  **FALSE!**

“...injecting through intervening lengths of intravenous tubing.”  **FALSE!**

“...maintaining pressure on the plunger to prevent backflow of body fluids.”  **FALSE!**

“...not able to observe contamination or blood.”  **FALSE!**



## Unsafe Injection Practices Result In...

- Patients placed at risk for life threatening infections
- Referral of providers to licensing boards for disciplinary action
- Legal actions such as malpractice suits filed by patients
- CMS and The Joint Commission have begun assessing injection practices as part of facility inspections



## A Call to Action!

- Injection practices should not provide a pathway for transmission of life-threatening infections"
- Injection safety is every provider's responsibility"
- Safe injection practices should be discussed and reviewed frequently among colleagues"



## Injection Safety Checklist!

### INJECTION SAFETY CHECKLIST

The following Injection Safety Checklist items are a subset of items that can be found in the CDC Injection Prevention Checklist for Outpatient Settings: Minimum Expectations for Safe Care.

The checklist, which is appropriate for both routine and complex settings, should be used to systematically assess adherence of healthcare personnel to safe injection practices. Assessment of adherence should be conducted by direct observation of healthcare personnel during the performance of their duties.

| Injection Safety  | Practice Performed? | If answer is No, document plan for remediation |
|---|---------------------|--|
| Injectants are prepared using aseptic technique in a clean area free from contamination or contact with blood, body fluids or contaminated equipment.   | Yes No              |  |
| Needles and syringes are used for only one patient (this includes manufactured prefilled syringes and cartridge devices such as insulin pens).  | Yes No              |  |
| The rubber septum on a medication vial is disinfected with alcohol prior to puncturing.   | Yes No              |  |
| Medication vials are entered with a new needle and a new syringe when obtaining additional doses for the same patient.  | Yes No              |  |
| Single dose (single-use) medication vials, ampules, and bags or bottles of intravenous solutions are used for only one patient.   | Yes No              |  |
| Medication administration tubing and connectors are used for only one patient.  | Yes No              |  |
| Multi-dose vials are dated by MCP when they are first opened and discarded within 28 days, unless the manufacturer specifies a different duration or longer date for that opened vial.  | Yes No              |  |
| Yes, this observation is reported to supervisor for the site.   | Yes No              |  |
| Multi-dose vials are dedicated to individual patients whenever possible.  | Yes No              |  |
| Multi-dose vials to be used for more than one patient are kept in a controlled medication area and fit and enter the controlled patient treatment area (e.g., operating room, patient room) only after the fit and enter the controlled patient treatment area the second time the patient is seen and the second time the patient is seen and the second time the patient is seen. | Yes No              |  |

**RESOURCES**  
 Checklist: [http://www.cdc.gov/100path/getthefacts/medication\\_safety\\_checklist\\_07\\_2011.pdf](http://www.cdc.gov/100path/getthefacts/medication_safety_checklist_07_2011.pdf)  
 Guide to Injection Prevention for Outpatient Settings: Minimum Expectations for Safe Care.  
<http://www.cdc.gov/100path/getthefacts/standards-of-ambulatory-care-7-2011.pdf>

[www.oneandonlycampaign.org](http://www.oneandonlycampaign.org)



[www.cdc.gov/injectionsafety](http://www.cdc.gov/injectionsafety)



## Resources and Information!

**[www.cdc.gov/injectionsafety!](http://www.cdc.gov/injectionsafety!)**

**[ONEandONLYcampaign.org!](http://ONEandONLYcampaign.org!)**



## Materials Available for Order!

**One & Only Campaign Materials For Order Via CDC-INFO**

|   |   |   |  |   |
|---|---|---|--|---|
| <br>Safe Injection Practices DVD<br>Item 22-0087                   | <br>Re for Safe Injection Poster<br>Item 22-0096                   | <br>It's Elementary Poster<br>Item 22-0087                       | <br>Provider Brochure<br>Item 22-0702  | <br>Patient Brochure<br>Item 22-0701 |
| <br>Injection Safety Pocket Card<br>Item 22-0713                   | <br>Logo Poster for Providers<br>Item 22-0700                      | <br>Logo Poster for General Public<br>Item 22-0699               | <br><b>How to Order</b><br>Scan with your Smartphone to access the ordering page<br>CALL 1-800-CDC-INFO<br>CLICK <a href="http://www.cdc.gov/pub/dhga.aspx">http://www.cdc.gov/pub/dhga.aspx</a> |   |
| <br>Injection Safety Campaign Misconceptions Flyer<br>Item 22-0706 | <br>Injection Safety Healthcare Provider Checklist<br>Item 22-0706 | <br>Injection Safety Healthcare Provider Toolkit<br>Item 22-0707 |  |   |

**1-800-CDC-INFO"**

# *Promotional Materials*

**1 ONE NEEDLE,  
ONE SYRINGE,  
ONLY ONE TIME.**



Safe Injection Practices Coalition  
[www.ONEandONLYcampaign.org](http://www.ONEandONLYcampaign.org)

# Injection Safety Guidelines

from the  
Centers for Disease  
Control and Prevention

## Injection Safety Guidelines From CDC

- Never administer medications from the same syringe to more than one patient, even if the needle is changed.
- After a syringe or needle has been used to enter or connect to a patient's IV it is contaminated and should not be used on another patient or to enter a medication vial.
- Never enter a vial with a used syringe or needle.
- Never use medications packaged as single-dose vials for more than one patient.
- Assign medications packaged as multi-dose vials to a single patient whenever possible.
- Do not use bags or bottles of intravenous solution as a common source of supply for more than one patient.
- Follow proper infection control practices during the preparation and administration of injected medications.
- Wear a surgical mask when placing a catheter or injecting material into the spinal canal or subdural space.

Adapted from: Guideline for isolation precautions: preventing transmission of infectious agents in health care settings 2007. Atlanta, GA: US Department of Health and Human Services, CDC; 2007. Available at: <http://www.cdc.gov/hicpac/pdf/isolation/isolation2007.pdf>

# INJECTION SAFETY CHECKLIST

The following Injection Safety checklist items are a subset of items that can be found in the *CDC Infection Prevention Checklist for Outpatient Settings: Minimum Expectations for Safe Care*.

The checklist, which is appropriate for both inpatient and outpatient settings, should be used to systematically assess adherence of healthcare personnel to safe injection practices. (Assessment of adherence should be conducted by direct observation of healthcare personnel during the performance of their duties.)

| Injection Safety   | Practice Performed? | If answer is No, document plan for remediation |
|--|---------------------|--|
| Injections are prepared using aseptic technique in a clean area free from contamination or contact with blood, body fluids or contaminated equipment.  | Yes No              |  |
| Needles and syringes are used for only one patient (this includes manufactured prefilled syringes and cartridge devices such as insulin pens).   | Yes No              |  |
| The rubber septum on a medication vial is disinfected with alcohol prior to piercing   | Yes No              |  |
| Medication vials are entered with a new needle and a new syringe, even when obtaining additional doses for the same patient.   | Yes No              |  |
| Single dose (single-use) medication vials, ampules, and bags or bottles of intravenous solution are used for only one patient.   | Yes No              |  |
| Medication administration tubing and connectors are used for only one patient.   | Yes No              |  |
| Multi-dose vials are dated by HCP when they are first opened and discarded within 28 days unless the manufacturer specifies a different (shorter or longer) date for that opened vial.<br>Note: This is different from the expiration date printed on the vial.  | Yes No              |  |
| Multi-dose vials are dedicated to individual patients whenever possible.   | Yes No              |  |
| Multi-dose vials to be used for more than one patient are kept in a centralized medication area and do not enter the immediate patient treatment area (e.g., operating room, patient room/cubicle).<br>Note: If multi-dose vials enter the immediate patient treatment area they should be dedicated for single-patient use and discarded immediately after use. | Yes No              |  |

## RESOURCES

Checklist: <http://www.cdc.gov/HAI/pdfs/guidelines/ambulatory-care-checklist-07-2011.pdf>

Guide to Infection Prevention for Outpatient Settings: Minimum Expectations for Safe Care:

<http://www.cdc.gov/HAI/pdfs/guidelines/standatds-of-ambulatory-care-7-2011.pdf>



1 needle  
1 syringe  
+ 1 time



0 infections

It's elementary!

Patients and healthcare providers must insist on nothing less than ***One Needle, One Syringe, Only One Time*** for each and every injection.

For more information, please visit:

**OneandOnlyCampaign.org**

The *One & Only Campaign* is a public health effort to eliminate unsafe medical injections. To learn more about safe injection practices, please visit [OneandOnlyCampaign.org](http://OneandOnlyCampaign.org).



For the latest news and updates, follow us on Twitter @injectionsafety and Facebook/OneandOnlyCampaign.



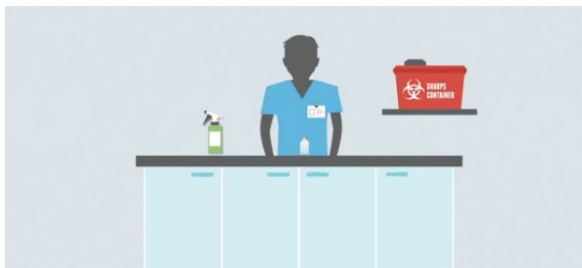
## *Multimedia Links*

# Multimedia Links

## Injection Safety PowerPoint Video:



## Videos:



## Check Your Steps! Make Every Injection Safe [3:15 mins]



## Managing Patient Safety, One Injection at a Time [2:35 mins]



## Safe Injection Practices – How to Do it Right [4:25 mins]



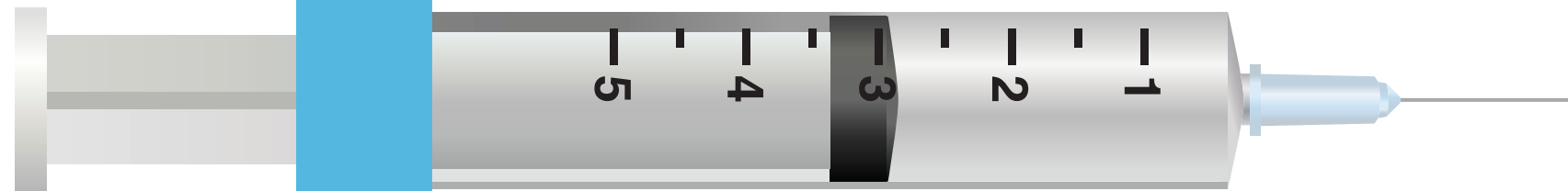
## Safe Injection Practices: A Video for Healthcare Providers [13:01 mins]

*For more information, please visit One and Only Campaign*

# Prevent Infections in Your Patients

*Injection Safety is Every Provider's Responsibility*

**1 ONE NEEDLE,  
ONE SYRINGE,  
ONLY ONE TIME.**



Safe Injection Practices Coalition

www.**ONEandONLY**campaign.org

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For the latest news and updates, follow us on Twitter @injectionsafety and Facebook/OneandOnlyCampaign.

